Contains Biofeeds Exclusive Amino-Carbon Technology®

ACT

Biofeed®

PROFESSIONAL TURF PRODUCTS

Biofeed® products are formulated from high-quality, natural, food-grade additives and are FREE of the following ingredients:

- *No EDTA*
- *No Humic Acid*
- *No Fulvic Acid*
- *No Sulfuric Acid*
- *No Toxic Elements*

Our Driving Principle

Biofeed® Solutions Inc. is dedicated to preserving our environment by creating and promoting the use of enzyme-based liquid fertilizer products which renew life into the Earth's soils and water.

Biofeed® provides the professional turf manager with dynamic bio-products for both plant nutrition and soil management.

These enzyme-based, non-toxic solutions are formulated to condition and build healthier soil, while they supply nutrients in a plant available form. This means that fewer nutrients are wasted.

The result is a vibrant, balanced, natural environment where beneficial aerobic bacteria can flourish with a focus on the long-range needs of quality greens, tees, fairways, sports turf and water systems.

We strive in every way to provide products and technologies that work in harmony with nature with no harmful impact on our environment.

Biofeed® Builds Better Soil!℠

Our Primary Goal

Since day one, the professionals at Biofeed have carefully developed technologies that counter the negative impact caused by industrial chemicals.

We have succeeded with the primary goal of producing safe, technology-based alternatives to harmful chemicals.

Today, Biofeed holds to its original goal of discovering innovative technologies and developing these into beneficial products that restore and protect the Earth's precious environment.

Biofeed manufactures easy-to-use liquid fertilizers for turf managers that promote nutrient solubility and availability. Ingredients are natural and food grade.

All nutrients must be soluble for absorption and delivery to turf either through the leaf or root uptake.

This requires the nutrient to be complexed with the proper balance of bio-available compounds that all turf favors.

This is what we have achieved with our combination of technologies:

- Amino-Carbon Technology® (ACT)
- Chelation Technology
- H_2O-Dehydrogenase (HDH) Technology
- Nutrient-Delivery Technology
- Enzyme-Based Technology

Innovation That Grows℠

AMINO-CARBON TECHNOLOGY® (ACT)

Contains Biofeeds Exclusive Amino-Carbon Technology®
ACT

ACT® is a formulation designed to mimic Nature's nutrient delivery system. The Biofeed® proprietary process converts exact plant extracts and intracellular components into a concentrate of organic acids, biostimulants, enzymes, coenzymes, complexed nutrients, polysaccharides, antioxidants, freshwater algae, and other beneficial components.

Improves Chlorophyll Production

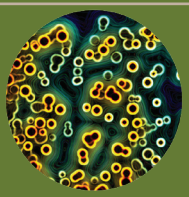
Increased chlorophyll production resulting in more conversion of light into energy for leaf maturation, stem growth and root growth. Chlorophyll creates the dense, deep green leaf color of healthy plants, trees, and turf.

Releases Tied-Up Soil Nutrients

Natural chelating agents dissolve minerals and nutrients that are tied-up and unavailable to hungry roots. ACT remains active long after application to improve the soil's Cation Exchange Capacity (CEC).

Stimulates Beneficial Aerobic Microbes

Soil that is teaming with aerobic microbial activity supports stronger roots, plants, trees and turf growth. This also helps to keep disease causing factors in check, and reduces the occurrence of black layer, which is toxic to delicate plant roots.



Provides Balanced Nutrition

Plant nutrients complexed with ACT® to feed tees, fairways and greens. Providing proper plant nutrition and balanced soil care is the key to growing award-winning golf courses. Formulated for use on all types of turf grass, year-round!

Releases Oxygen and Hydrogen into the Soil & Water

H_2O Dehydrogenase (HDH) enzymes that have the unique ability to cleave, or split, the water molecule. When HDH splits the water molecule, oxygen and hydrogen are released to supports the growth of aerobic microbes in both soil and water systems.

Buffers Salt & Cleans Irrigation Systems

Buffers harmful salt, allowing it to leach out of the soil. Unique, natural chelation action removes calcium and other mineral and salt residues that clog drip emitters and sprinkler systems.

CHELATION TECHNOLOGY

Biofeed® Solutions, Inc. has developed an advanced natural chelating technology contained in our exclusive ACT® formula to carry out a variety of chelation functions.

NOTE: Our chelating technology does not use EDTA, Humic Acid, Fulvic Acid, chemicals or synthetics.

Biofeed's chelation converts previously unabsorbed minerals into a soluble form that can be better absorbed by roots and plants.

This same chelation action provides nourishment to the soil microbial system to thrive and multiply, so they may further chelate minerals to soluble forms for plant uptake.

Biofeed's chelation technology stimulates the soil microbial system which attack and consume both synthetic and organic chemical residues, further converting pollutants and chemical matters into non-harmful forms.

Biofeed's unique chelation technology is also designed to buffer and combine with harmful salt, making it non-toxic. This effectively reduces soil toxicity and allows for easy leaching away from the root-zone. This all results in increased energy, protein storage, respiration, growth and healthier turf.

H_20-DEHYDROGENASE (HDH) TECHNOLOGY

AEROBIC VS. ANAEROBIC

Scientists agree that disease factors found in both plants and water systems primarily stem from the lack of oxygen. Both water systems and soils lacking adequate oxygen are known as ***anaerobic***, while water systems and soils that have adequate oxygen on a consistent basis are referred to as ***aerobic***.

Anaerobic bacteria do not require oxygen to thrive. More importantly, anaerobic bacteria CANNOT survive in the presence of oxygen.

Like the human body, soil too must contain a healthy supply of oxygen to remain alive and productive.

Biofeed® products contain ACT®, which in turn, contains specialized enzymes – H_20-DEHYDROGENASE (HDH) – that split the H_2O water molecule to release elemental oxygen directly into the soil.

Oxygen-enriched soil results in a dramatic increase of beneficial aerobic microbial life and activity, creating a nutrient rich root-zone while at the same time digesting and destroying harmful chemical compounds and preventing disease-causing anaerobic microbes to thrive.

AEROBIC BENEFITS:

- A highly aerobic environment prevents the proliferation of noxious anaerobic bacteria.
- Eliminates black layer by delivering oxygen to the root-zone.
- Reduces dependence on mechanical aeration which, in turn, saves time and cost.
- Eliminates the production of anaerobic bacteria which causes putrid odors and destroys tender root systems.
- Reducing anaerobic bacteria also reduces mucilage production that blocks water and air movement in soil.
- Reduces chemo-trauma or chemical burn to the roots in golf greens.
- Improves chemical and metabolic oxidation/reduction reactions in soils allowing for improved nutrient uptake by turf roots while reducing disease occurrence.
- Improved water penetration, fertilizer efficiency, and overall turf quality.
- HDH enzymes oxygenate water and soil to gently lower pH as a result of freeing hydrogen from the water molecule.

NUTRIENT-DELIVERY TECHNOLOGY

NUTRIENT TECHNOLOGY

Nitrogen, Phosphorus, and Potassium (N-P-K) are essential base nutrients and Biofeed® products combine these with a scientific understanding, using the highest quality food-grade ingredients and in exact proportions needed for growers' specific applications.

The nutrients contained in Biofeed products are combined with our proprietary nutrient delivery system, ACT®. Biofeed nutrients are liquid and remain soluble at all pH levels.

This combined with ACT's chelating agents delivers applied nutrients and residual nutrients tied-up in the soil. This faster, more complete uptake of nutrients by the root and plants reduces the amount of nutrients lost due to leaching away when irrigated. Upon entering the soil, Biofeed fertilizers also act as a catalyst to convert applied nutrients into nutrient rich microbial residues that become the preferred food source for healthy plant growth.

ENZYME-BASED TECHNOLOGY

ENZYME-BASED TECHNOLOGY

Biofeed® products are specialized enzyme-based formulations that contain very specific enzymes in exact combinations, proven to build living, productive soil, thriving plants, and professional turf. Enzymes play a vital role for building healthy soil as well as nourishing plants and their cells. Enzymes act as catalysts to make nutrients soluble for plant uptake and cell nourishment.

- Make tied-up nutrients more mobile
- Stimulate soil microbes
- Increase elemental oxygen and hydrogen within the soil
- Convert toxins to non-harmful forms
- Removes harmful salt from the root-zone

In addition, enzymes perform numerous other actions that are essential for optimum soil conditions and professional turf.

PRODUCTS AT A GLANCE . . .

*Biofeed® Products make turf grass **GREEN** by:*

- *Chelating minerals and fertilizers*
- *Releasing tied-up soil nutrients*
- *Releasing elemental oxygen and nitrogen in the soil*
- *Improving chlorophyll production*
- *Stimulating aerobic microbes*
- *Buffering minerals and salt*
- *Stimulating deeper root growth*
- *Improving water absorption and retention*
- *Reducing nutrient loss due to leaching*

PACKAGING: Biofeed® products are available in 2.5-Gallon Jugs (2 per case), 5-Gallon Pails, 30-Gallon Drums, 55-Gallon Drums, and 275-Gallon Bulk Totes.

FOLIAR NUTRITION

A 100% organic nitrogen derived from soy protein hydrolysate and contains carbon in its molecule. BIO-N™ is immediately available to plants due to its dynamic structure which resembles all plant life.

Provides liquid nitrogen in four plant-available forms in a blend with ACT® for efficient absorption into the leaf and roots.

Provides a dynamic blend of nitrogen and phosphorus in a complex with ACT® to promote strong stems, leaf growth, and deeper root growth.

A high phosphate nutrient solution in a complex with ACT® to promote stronger metabolic activity, cellular growth, and stronger horizontal stem and leaf growth.

Primary nutrients combined with ACT® to promote efficient cellular function, root growth, and strong vertical growth that is essential to managing high-quality professional turf.

Potassium is complexed with ACT® for enhanced uptake and translocation throughout the entire plant and is beneficial during extremes in temperature and water stress.

A foliar and soil applied potassium/oil-based activator solution with ACT®. Use it to balance your turf and plant insect and disease management program.

Provides turf with magnesium, sulfur and ACT®. MAG-4 enters the plant through foliar or soil application to supply plant-available Magnesium.

SOIL & SALT MANAGEMENT

A bio-chemical plant and soil additive that contains a super-concentrate of ACT® including molecular and intracellular components plus nitrogen in a bio-available form.

ACT® plus nitrogen to chelate a variety of minerals, salt and heavy metals. Also enhances bio-degradation of a wide range of organics and complex hydrocarbons.

SECONDARY & MICRONUTRIENTS

Combines liquid iron and ACT® to increase leaf absorption. Iron promotes plant growth, antioxidant and plant enzyme activity and chlorophyll production for deeper green leaf color.

Contains micronutrients and ACT® to maximize leaf absorption. These nutrients are required for plant growth, antioxidant and enzyme activity and chlorophyll production.

A multi-purpose wetting agent and surfactant formula with a powerful surface active agent to enhance irrigation efficiency and soil moisture levels.

A rich source of potassium and silica with ACT® for efficient leaf absorption and translocation throughout the plant. Improves turf stand and green speed or stimp rating by increasing stem and leaf rigidity.

Combines elemental molybdenum and ACT® to support vital bio-chemical reactions. Once applied to the leaf, TRACE™ rapidly moves throughout the xylem and phloem conductive tissue of the turf plant.

POND & LAKE MANAGEMENT

A bio-dynamic formulation of naturally derived enzymes, organic acids and growth promoting nutrients that stimulate healthier aerobic bio-activity in lakes and ponds.

BIO-N™ 9-0-0 AMINO ACID NITROGEN

BIO-N™ is 100% organic Nitrogen derived from soy protein hydrolysate.

BIO-N™ is immediately available to plants due to its dynamic structure which resembles all plant life. It is this very structure that makes it the ideal source of nitrogen for turf. Apply **BIO-N™** as a foliar to provide immediate plant response.

RESULTS

Provides the vital, major component of chlorophyll which gives turf a deep, green color. Nitrogen enables energy-transfer compounds, such as ATP (adenosine triphosphate). Nitrogen is also a significant component of nucleic acids such as DNA, the genetic material that allows plant cells to grow and reproduce.

BENEFITS

- Corrects nitrogen deficiency
- Increases root growth and turf blade maturation
- Improves ultraviolet (UV) resistance
- Faster cell repair following mowing and wear
- Component of chlorophyll, ATP, and nucleic acids

GUARANTEED ANALYSIS

Total Nitrogen (N)..... 9.0%

Derived From: Soy Protein Hydrolysate.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

ATP | ATP (adenosine triphosphate) allows plant cells to conserve and use the energy released in metabolism.

BRIX | Enhanced natural sugar production (BRIX) promotes strong stem, leaf, and deeper root growth.

CHLOROPHYLL | A natural compound present in green plants that gives them their color. It helps plants to absorb energy from the sun as they undergo the process of photosynthesis.

NITROGEN | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

NUCLEIC ACIDS | The main information-carrying molecules of the cell, and, by directing the process of protein synthesis, they determine the inherited characteristics of every living thing.

SAR | Enhanced Systemic Acquired Resistance (SAR) in plants improves their resistance to insects and disease.

UV | Ultraviolet (UV) wavelengths can reduce plant genome stability, growth, and productivity by damaging the plant's DNA.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

BIO-N™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products. Follow directions closely to avoid fertilizer burn of your plants.

GREENS, TEES AND TURF:

Apply 1-2 quarts per acre, or for smaller areas apply 6-30 ounces per 1,000 square feet, depending on turf or soil requirements. Apply via fertigation every 30 days or as required. Water normally following application.

PHYSICAL CHARACTERISTICS

- Weight: 9.9 lbs./gal. (0.891 lbs. N/gal.)
- pH Range: 3.9-4.5
- Enzymatic activity may affect pH during storage.

N-30 30-0-0 LIQUID NITROGEN

N-30 provides liquid nitrogen in four plant-available forms in a blend with Biofeed's exclusive Amino-Carbon Technology® ACT for efficient absorption into the leaf and roots.

Nitrogen is also a major component of amino acids, the building blocks of proteins.

RESULTS

Without the nitrogen required to make proteins, plants wither and die. Some proteins act as structural units in plant cells while others act as enzymes, making possible many of the biochemical reactions on which life is based.

BENEFITS

- Promotes deep green leaf color
- Improves ball roll speed (STIMP Rating)
- Balanced nutrition for turf, shrubs, trees and flowers
- Stimulates beneficial aerobic soil microbes

GUARANTEED ANALYSIS

Total Nitrogen (N).....30.0%

- 7.0% Ammoniacal Nitrogen
- 7.0% Nitrate Nitrogen
- 14.0% Urea Nitrogen
- 2.0% Water Soluble Organic Nitrogen

Derived from Ammonium Nitrate, Urea and Soy Protein Hydrolysate.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

AMINO ACIDS | Amino acid fertilizers are readily absorbed, transported, and used as a source of nitrogen and carbon for plants.

NITROGEN | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

N-30 is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products. Follow directions closely to avoid fertilizer burn of your plants.

GREENS, TEES AND TURF: Apply 2-10 gallons per acre, or for smaller areas apply 6-30 ounces per 1000 square feet, depending on turf or soil requirements. Apply via fertigation every 30 days or as required. Water normally following application.

PHYSICAL CHARACTERISTICS

- Weight: 10.8 lbs./gal. (3.24 lbs. N/gal.)
- pH Range: 7.5-8.5
- Enzymatic activity may affect pH during storage.

CARBOMAX™ 6-20-0 FOLIAR AND SOIL PHOSPHATE

CARBOMAX™ improves turf density and quality of cut and play performance on golf greens, tees and fairways, while it supplies primary nutrients commonly lost due to regular mowing and leaching.

RESULTS

A dynamic blend of nitrogen and phosphorus in a complex with ACT for easier absorption and translocation in all turf resulting in enhanced sugar (BRIX) production. These combine to promote strong stem and leaf growth, deeper root growth and earlier maturity of turf.

BENEFITS

- Dynamic phosphate nutrition for professional turf
- Promotes early plant maturity and root establishment of newly seeded areas
- Promotes horizontal growth to produce dense turf
- Improves ball roll speed (STIMP Rating)

GUARANTEED ANALYSIS

Total Nitrogen (N) 6.0%

5.0% Ammoniacal Nitrogen

1.0% Other Water Soluble Nitrogen

Available Phosphate (P_2O_5).....20.0%

Derived from Urea, Soy Protein Hydrolysate and Phosphoric Acid.

ALSO CONTAINS NON-PLANT FOOD INGREDIENT: 1.0% Molasses (Microbe Food)

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

BRIX | Enhanced natural sugar production (BRIX) promotes strong stem, leaf, and deeper root growth.

MICROBE FOOD | To grow and multiply, good aerobic bacteria needs food (nutrients), water, proper temperature, time, air, proper acidity (pH) and proper salt levels.

NITROGEN | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

PHOSPHORUS | Promotes energy production in living plants.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

CARBOMAX™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

FOLIAR APPLICATION RATES:

Professional Sports Turf: Apply 0.5-2 gallons in 20-100 gallons of water per acre.

SOIL RATES:

Apply 1-4 gallons per acre via fertigation or sprayer. Irrigate after application to maximize distribution into root zone.

FERTIGATION AND DRIP IRRIGATION RATES:

Turf: Use 1-4 gallons per acre per irrigation. Continue irrigation after application to maximize fertilizer distribution.

PHYSICAL CHARACTERISTICS

- Weight: 10.4 lbs./gal. (0.624 lbs. N/gal.)
- pH Range: 5.5-6.5
- Enzymatic activity may affect pH during storage.

EXPO™ 8-16-4 FOLIAR PHOSPHATE BLEND

EXPO™ is a high phosphate liquid in a complex with Biofeed® ACT®. These combine to promote stronger metabolic activity, cellular growth and stronger horizontal stem and leaf growth that is essential to maintaining high-quality greens, tees and turf.

RESULTS

Promotes more vigorous turf recovery by supplying primary nutrients commonly lost due to soil mineral tie-up as well as regular mowing and leaching.

BENEFITS

- Increases turf density and ball roll speed (STIMP Rating)
- Corrects phosphorus deficiency
- Easily sprayed on or applied through center pivots
- Regular use of **EXPO™** stimulates and supports sugar (BRIX) production

GUARANTEED ANALYSIS

Total Nitrogen (N)	8.0%
7.0% Urea Nitrogen	
1.0% Other Water Soluble Nitrogen	
Available Phosphate (P_2O_5)	16.0%
Soluble Potash (K_2O)	4.0%

Derived from Urea, Soy Protein Hydrolysate, Phosphoric Acid, and Potassium Hydroxide.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

BRIX | Enhanced natural sugar production (BRIX) promotes strong stem, leaf, and deeper root growth. BRIX also promotes plant vitality which helps reduce disease occurrence.

NITROGEN | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

PHOSPHORUS | Promotes energy production in living plants.

POTASSIUM | Directs nitrogen use and water use in plants.

STIMP RATING | The stimp rating of a putting green is a numerical value that represents how fast the golf ball rolls on the putting surface. Golfers call this rating the green speed.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

EXPO™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

GREENS, TEES AND TURF:

Foliar apply 1-2.5 gallons in 50-100 gallons of water per acre, or for smaller areas apply 4-16 ounces in 5-10 gallons of water per 1000 square feet. Apply every 7-14 days or as needed with sprayer. Water normally following application.

PHYSICAL CHARACTERISTICS

- Weight: 10.5 lbs./gal. (0.84 lbs. N/gal.)
- pH Range: 7.0-8.0
- Enzymatic activity may affect pH during storage.

GT PRO™

9-4-12 GREENS AND TEES FOLIAR

GT PRO™ provides a dynamic blend of primary nutrients plus Biofeed® ACT®. These combine to promote efficient cellular function and promotes root growth and strong vertical growth that is essential to managing high quality professional turf.

RESULTS

Supplies essential nutrients commonly lost due to regular mowing and leaching.

Regular use of **GT PRO™** stimulates and supports dynamic cellular function and growth while improving Select Acquired Resistance (SAR).

BENEFITS

- Dynamic phosphate nutrition for all professional turf
- Enhances root establishment and early plant maturity
- Promotes horizontal growth to produce dense turf
- Improves ball roll speed (STIMP Rating).

GUARANTEED ANALYSIS

Total Nitrogen (N)	9.0%
6.0% Urea Nitrogen	
2.0% Ammoniacal Nitrogen	
1.0% Other Water Soluble Nitrogen	
Available Phosphate (P_2O_5)	4.0%
Soluble Potash (K_2O)	12.0%

Derived from Urea, Soy Protein Hydrolysate, Ammonium Phosphate, and Potassium Hydroxide.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

ANTIOXIDANT | An additive known to attach to – and shut down – free radicles.

NITROGEN | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

PHOSPHORUS | Promotes energy production in living plants.

POTASSIUM | Directs nitrogen use and water use in plants.

SAR | Enhanced Systemic Acquired Resistance (SAR) in plants improves their resistance to insects and disease.

STIMP RATING | The stimp rating of a putting green is a numerical value that represents how fast the golf ball rolls on the putting surface. Golfers call this rating the green speed.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

GT PRO™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

GREENS, TEES AND TURF:

Foliar apply 1-5 gallons in 50-100 gallons of water per acre, or for smaller areas apply 8-16 ounces in 5-10 gallons of water per 1000 square feet. Apply every 7-14 days or as needed with sprayer. Water normally following application.

PHYSICAL CHARACTERISTICS

- Weight: 10.5 lbs./gal. (0.945 lbs. N/gal.)
- pH Range: 9.3-10.3
- Enzymatic activity may affect pH during storage.

K-PRO™ 0-0-20 FOLIAR POTASSIUM FERTILIZER

K-PRO™ is a foliar applied potassium solution with ACT®. **K-PRO™** potassium facilitates nitrogen metabolism and stimulates root growth, while providing a dynamic plant response due to its plant-friendly formulation.

Use it to balance your professional turf nutritional program.

RESULTS

This near-neutral solution allows for immediate uptake through the leaves and roots followed by translocation throughout the entire plant.

This improves the quantity and ratio of antioxidants produced by plants. This results in faster recovery during extremes in temperature and water stress.

BENEFITS

- Rapidly corrects potassium deficiency
- Increased root growth and leaf maturation
- Improves ultraviolet (UV) resistance
- Faster cell repair following mowing and wear

GUARANTEED ANALYSIS

Soluble Potash (K20) 20.0%

Derived from Potassium Hydroxide.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

ANTIOXIDANT | An additive known to attach to – and shut down – free radicles.

NITROGEN | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

POTASSIUM | Directs nitrogen use and water use in plants.

UV | Ultraviolet (UV) wavelengths can reduce plant genome stability, growth, and productivity by damaging the plant's DNA.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

K-PRO™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

GREENS, TEES AND TURF:

As a foliar, apply 1-2.5 gallons in 50-100 gallons of water per acre, or for smaller areas apply 4-16 ounces in 10-20 gallons of water per 1000 square feet, or apply through a fertilizer injection system. Frequency and rate of applications may vary.

PHYSICAL CHARACTERISTICS

- Weight: 10.9 lbs./gal.
- pH Range: 11.5-12.5
- Enzymatic activity may affect pH during storage.

VECTROL®

0-0-10 POTASSIUM / PLANT-OIL BLEND

VECTROL® is a foliar and soil applied potassium / plant-oil blend with ACT®.

VECTROL® goes further than standard fertilization as it stimulates and supports dynamic cellular function and growth while it reduces insect and disease occurrence via enhanced Systemic Acquired Resistance (SAR).

Use it to balance your turf or plant insect and disease management program.

RESULTS

When applied as directed, this dynamic solution is quickly absorbed via cellular translocation where it improves the quantity and ratio of antioxidants and phenolic acids produced by plants.

This results in faster recovery from environmental stresses caused by disease and insect infestation.

BENEFITS

- Enhances disease and insect resistance via enhanced SAR
- Promotes drought and heat tolerance
- Faster cell repair following mowing and wear
- Blends well with most fertilizers and turf protection chemicals
- Complements the use of plant protection products.

GUARANTEED ANALYSIS

Soluble Potash (K2O) 10.0%

Derived from Freshwater Algae and Potassium Hydroxide

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

ANTIOXIDANT | An additive known to attach to – and shut down – free radicles.

PHENOLIC ACIDS | The main polyphenols made by plants. These compounds have diverse functions and are immensely important in plant-microbe interactions/symbiosis.

PHOSPHORUS | Promotes energy production in living plants.

POTASSIUM | Directs nitrogen use and water use in plants.

SAR | Enhanced Systemic Acquired Resistance (SAR) in plants improves their resistance to insects and disease.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

VECTROL® is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

GREENS, TEES AND TURF:

As a foliar, apply 2-6 Quarts in 50-100 gallons of water per acre, or for smaller areas apply 8-32 ounces in 10-20 gallons of water per 1000 square feet, and spray to the point of runoff. Frequency and rate of applications may vary.

PHYSICAL CHARACTERISTICS

- Weight: 9.3 lbs./gal.
- pH Range: 12.0-13.0
- Enzymatic activity may affect pH during storage.

> *We include Vectrol® in every type of fertilizer treatment we provide to our customers - from root feeding, foliar, to lawn feeding. We see a definite reduction of insect and disease problems that we face. Vectrol® works!*
>
> *Gary Huff, Owner*
> *RSS Landscape Solutions, Prescott, AZ*

MAG-4 LIQUID MAGNESIUM

MAG-4 provides turf with magnesium and Biofeed's exclusive Amino-Carbon Technology® ACT. It readily enters the plant through foliar or soil application to supplement deficiency by supplying plant available Magnesium.

RESULTS

Provides magnesium which is actively involved in photosynthesis as the central element of the chlorophyll molecule. Magnesium plays an important role in plant respiration and energy metabolism.

BENEFITS

- Key element in chlorophyll production and function
- Required for efficient plant enzyme activity
- Regulates plant respiration and energy metabolism
- Supports protein synthesis
- Enables greater BRIX production

GUARANTEED ANALYSIS

Sulfur (S) 5.0%

Magnesium (Mg) 4.0%

Derived from Magnesium Sulfate.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

BRIX | Enhanced natural sugar production (BRIX) promotes strong stem, leaf, and deeper root growth. BRIX also promotes plant vitality which helps reduce disease occurrence.

CHLOROPHYLL | A natural compound present in green plants that gives them their color. It helps plants to absorb energy from the sun as they undergo the process of photosynthesis.

MAGNESIUM | Magnesium is required for photosynthesis in plants. Without magnesium, chlorophyll cannot capture sun energy needed for photosynthesis. In short, magnesium is required to give turf its green color.

PHOTOSYNTHESIS | A chemical process that uses sunlight to turn carbon dioxide into sugars. The sugars are used as energy, and to build other kinds of molecules.

SULFUR | Used in the formation of amino acids, proteins, and oils. It is necessary for chlorophyll formation

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

MAG-4 is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

GREENS, TEES AND TURF:

Foliar: Apply 1-4 quarts in 25-50 gallons of water per acre, or 4-8 ounces in 5-10 gallons of water per 1000 square feet. Apply every 7-14 days or as needed with sprayer.

PHYSICAL CHARACTERISTICS

- Weight: 10.3 lbs./gal.
- pH Range: 5.0-6.0
- Enzymatic activity may affect pH during storage.

SUPER-C™

6-0-0 SOIL AND PLANT MANAGEMENT SYSTEM

SUPER-C™ is a bio-chemical plant and soil additive that is rich with ACT®, which delivers a powerful combination of nutrients which work to strengthen plant growth and promotes aerobic microbial activity below ground.

This rich combination provides cellular nutrition on a molecular level that feeds both plant cells and soil organisms to stimulate the growth of beneficial aerobic soil microbes.

RESULTS

Promotes polysaccharide production which builds better soil structure and reduces compaction. Improves the oxygen content of the soil and root-zone.

Also contains complex organic compounds that dissolve insoluble soil minerals to enhance plant uptake, buffer free salt to reduce toxicity, and help leach it out of the root zone.

BENEFITS

- Builds soil crumb structure and enhances polysaccharide production
- Releases oxygen and hydrogen into the soil to promote aerobic biological activity, helping the soil to breathe
- Decreases toxic salt levels in the soil by buffering salt and gently protecting soil pH

GUARANTEED ANALYSIS

Total Nitrogen (N)..... 6.0%

4.0% Urea Nitrogen

2.0% Other Water Soluble Nitrogen

Derived from Urea and Soy Protein Hydrolysate.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

DISSOLVED OXYGEN | Use of an enzyme system called H2O-Dehydrogenase (HDH) to effectively split the water molecule, releasing elemental oxygen and nitrogen within the soil.

NITROGEN | Provides plants the energy to grow. Part of the chlorophyll molecule giving plants their green color. Involved in photosynthesis which creates food for plants.

POLYSACCHARIDE PRODUCTION | Polysaccharides in soil contributes to soil aggregate stabilization.

SALT BUFFERING | Chelates buffer and combine with salt making is soluble to leach away from the root-zone.

SAR | Enhanced Systemic Acquired Resistance (SAR) in plants improves their resistance to insects and disease.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

SUPER-C™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products. May be used in fertigation systems. Utilize **SUPER-C™** on all soil types year-round to support biodynamic soil fertility.

GREENS, TURF GRASS & SOIL: Apply 4-8 ounces in 5-20 gallons of water per 1000 square feet, or 1-2 gallons in 50-100 gallons of water per acre. Water thoroughly. Apply every 2-4 weeks or as required.

FAIRWAYS: Apply 1-2 quarts in 50-100 gallons of water per acre once every 30 days with sprayer, or apply through a fertilizer injection system. Water thoroughly.

PHYSICAL CHARACTERISTICS

- Weight: 8.9 lbs./gal. (0.534 lbs. N/gal.)
- pH Range: 8.5-9.5
- Enzymatic activity may affect pH during storage.

> *When it comes to creating and maintaining top-notch turf, Biofeed makes my job easier.*
>
> *Ernie Pock, Director of Turf Management*
> *Grayhawk Golf Club, Scottsdale, AZ*

CHETROL™ (KEY-TROL) 8-0-0 CHELATION MANAGEMENT

CHETROL™ (key-trol) is a concentrated formulation of ACT® plus added nitrogen that is formulated to control a variety of minerals and salt. This dynamic blend also aids in enhancing bio-degradation of a wide range of organics and complex hydrocarbons.

CHETROL™ is an effective blending additive for most granular fertilizers to increase nutrient efficiency and enhance herbicide uptake.

RESULTS

Dissolves mineral scale and buffers salt in soils and irrigation water that often tie-up essential plant nutrients. Removes mineral scale build-up from irrigation lines and emitters, restoring water-flow and sprinkler efficiency.

This process improves herbicide efficiency, reduces usage rates and chemical tie-up of herbicides.

BENEFITS

- Chelates a variety of minerals, salt, and heavy metals
- An effective blending additive for most granular and liquid fertilizers
- Removes mineral scale build-up from irrigation lines
- Enhances herbicide uptake
- Supports the breakdown of chemical and petroleum compounds

GUARANTEED ANALYSIS

Total Nitrogen (N)..... 8.0%

6.0% Urea Nitrogen

2.0% Other Water Soluble Nitrogen

Derived from Urea and Soy Protein Hydrolysate.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

BIO-DEGRADATION | Breakdown of materials by microorganisms or other biological activity.

CHELATION REACTIONS | Prevents and/or reduces nutrients being tied up in the soil.

NITROGEN | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

SAR | Enhanced Systemic Acquired Resistance (SAR) in plants improves their resistance to insects and disease.

SALT BUFFERING | Chelates buffer and combine with salt making is soluble to leach away from the root-zone.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

CHETROL™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

SOIL: Apply 1-4 quarts per acre every 2-4 weeks by ground sprayer, water-run or through a fertilizer injector system.

SALT REDUCTION AND NUTRIENT MANAGEMENT: Golf Courses: Apply 1-2.5 gallons per acre every 30 days by ground sprayer or through a fertilizer injector system.

PHYSICAL CHARACTERISTICS

- Weight: 9.5 lbs./gal. (0.76 lbs. N/gal.)
- pH Range: 8.5-9.5
- Enzymatic activity may affect pH during storage.

> *"We have hundreds of customers that grow Golf Course Turf that use CHETROL® through spray applications and through their irrigation. In every case the lines remain clean of salt and mineral build-up and the soil is noticeably softer. Fertilizers also work much better, and we can reduce the application rates of them (fertilizers).*
>
> *Joaquin Pastor, President*
> *Cosaveg S.A, Spain*

MICRO-Fe™ LIQUID IRON

MICRO-Fe™ contains iron in a liquid solution of Biofeed's exclusive Amino-Carbon Technology® ACT to increase leaf absorption of this important element.

RESULTS

Promotes strong plant development, improved antioxidant production, plant enzyme activity and chlorophyll production for deeper green leaf color.

BENEFITS

- Corrects iron deficiency
- Promotes deep green leaf color

GUARANTEED ANALYSIS

Sulfur (S) 3.0%

Iron (Fe) 6.0%

Derived from Ferrous Sulfate.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

ANTIOXIDANT | An additive known to attach to and buffer free radicles.

CHLOROPHYLL | A natural compound present in green plants that gives them their color. It helps plants to absorb energy from the sun as they undergo the process of photosynthesis.

IRON | Critical to respiration and photosynthesis in all plants.

PLANT ENZYME ACTIVITY | Enzymes are the tools that soil microbes use to make nutrients available for microbial and plant uptake.

SULFUR | Used in the formation of amino acids, proteins, and oils. It is necessary for chlorophyll formation.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

MICRO-Fe™ is highly concentrated. Dilute with water prior to application to ensure adequate coverage.

GREENS, TEES AND TURF:

Foliar apply 1-2 gallons in 50-100 gallons of water per acre or for smaller areas apply 4-8 ounces in 3-5 gallons of water per 1000 square feet. Apply every 7-10 days or as needed with sprayer. DO NOT IRRIGATE for 30-60 minutes following application to allow for maximum foliar uptake.

PHYSICAL CHARACTERISTICS

- Weight: 10.6 lbs./gal.
- pH Range: 2.5-3.5
- Enzymatic activity may affect pH during storage.

MICRO-H™ MICRONUTRIENT BLEND

MICRO-H™ contains a powerful combination of ACT® and micronutrients to maximize leaf absorption of these powerful nutrients.

RESULTS

Provides nutrients required for stronger plant development, improved antioxidant and enzyme activity, and chlorophyll production which aids in producing deeper green leaf color.

BENEFITS

- Promotes deep green leaf color
- Stimulates beneficial aerobic soil microbes
- Trace-element nutrition for growing high quality plants and turf grass.

GUARANTEED ANALYSIS

Sulfur (S)	3.00%
Copper (Cu)	0.05%
Iron (Fe)	2.00%
Manganese (Mn)	2.00%
Molybdenum (Mo)	0.08%
Zinc (Zn)	2.00%

Derived from: Copper Sulfate, Iron Sulfate, Manganese Sulfate, Zinc Sulfate and Sodium Molybdate.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

COPPER | Chlorophyll production, photosynthesis, and respiration in plants.

IRON | Respiration and photosynthesis in all plants.

MANGANESE | Nitrogen use and chlorophyll production.

MOLYBDENUM | Required by enzymes involved with nitrogen conversion and reduction as well as symbiotic nitrogen fixation.

SULFUR | Used in the formation of amino acids, proteins, and oils. It is necessary for chlorophyll formation

ZINC | Hormone production and internode elongation.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

MICRO-H™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products. Not recommended for use in fertigation systems.

GREENS, TEES AND TURF:

Foliar apply 1-2 gallons in 20-50 gallons of water per acre, or for smaller areas apply 4-8 ounces in 5-10 gallons of water per 1000 square feet. Apply every 7-10 days or as needed with sprayer. Do not irrigate for 30-60 minutes following application to allow complete foliar absorption.

PHYSICAL CHARACTERISTICS

- Weight: 10.5 lbs./gal.
- pH Range: 7.2-8.2
- Enzymatic activity may affect pH during storage.

SURFACT™

MULTI-PURPOSE WETTING AGENT AND SURFACTANT

SURFACT™ is a multi-purpose wetting agent and surfactant formula.

SURFACT™ enhances the movement of water deep within the soil by reducing the tension of water molecules.

RESULTS

Contains a powerful surface active agent that enhances irrigation efficiency and soil moisture levels as it buffers salt for maximum performance.

BENEFITS

- Improves water penetration
- Reduces overall water usage
- Increases soil moisture levels
- Buffers minerals and salt

GUARANTEED ANALYSIS

CONTAINS NON-PLANT FOOD INGREDIENTS:

Active Ingredients:

Ammonium Lauryl Sulfate.....45.0%

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

SURFACTANT | Reduces the surface tension of water allowing it to flow freely.

SURFACE TENSION | Attraction of water molecules to other water molecules is what inhibits water from penetrating a small pore.

WETTING AGENT | Coats soil particles on the molecular level so water can penetrate.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

GENERAL WATER PENETRATION: Apply 1.0-3.0 quarts per acre via fertigation, water-run, or diluted in a sprayer followed by irrigation cycle or rainfall. Repeat as needed.

IMPROVED SEEDLING EMERGENCE: Apply 0.5-1.0 quart per acre to improve seedling germination and emergence. Apply by fertigation, water-run or spray directly over seed row separately, or tank mixed with fertilizers.

TRANSPLANTING: Dilute 0.3-0.5 quarts per 100 gallons of transplant water. Deep water at planting.

FALLOW/PLANTING BED TREATMENT: Apply 0.5-1.0 quart per acre to fallow beds followed by irrigation or rainfall to improve water infiltration and reduce water run-off. Use higher rate in compacted or high salt soils.

PHYSICAL CHARACTERISTICS

- Weight: 9.1 lbs./gal.
- pH Range: 8.0-9.0
- Enzymatic activity may affect pH during storage.

QUICK-6™ 1-0-5 FOLIAR SILICATE SOLUTION

QUICK-6™ provides a rich source of potassium and soluble silica with ACT® for efficient leaf absorption and translocation throughout the plant. These combine to promote strong vertical leaf and stem development that is essential to managing high quality turf.

RESULTS

Potassium and silica assist plant development following deposition of silica in the epidermal cell walls, thus enhancing the plant's ability to point its leaves towards the light source.

Improves turf stand and ball roll speed (STIMP Rating) by increasing stem and leaf rigidity.

BENEFITS

- Promotes strong vertical leaf and stem development
- Improves turf stand and green speed or stimp rating
- Increases stem and leaf rigidity

GUARANTEED ANALYSIS

Total Nitrogen (N)..... 1.0%

1.0% Other Water Soluble Nitrogen

Soluble Potash (K2O) 5.0%

Derived from Soy Protein Hydrolysate and Potassium Silicate.

ALSO CONTAINS NON-PLANT FOOD INGREDIENT: 6.0% Silica (SiO2) derived from Potassium Silicate.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

NITROGEN | Provides plants the energy to grow. Part of the chlorophyll molecule, which gives plants their green color. Involved in photosynthesis which creates food for plants.

POTASSIUM | Directs nitrogen use and water use in plants.

SILICA | Reduces oxidative stress and enhances plant cellular integrity.

STIMP RATING | The stimp rating of a putting green is a numerical value that represents how fast the golf ball rolls on the putting surface. Golfers call this rating the green speed.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

QUICK-6™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

GREENS, TEES AND TURF:

Foliar apply 22-66 ounces in 50-100 gallons of water per acre, or for smaller areas apply 1-3 ounces per 1000 square feet in 5-10 gallons of water. Apply every 7-14 days or as needed with sprayer. Water normally following application.

PHYSICAL CHARACTERISTICS

- Weight: 9.4 lbs./gal. (0.094 lbs. N/gal.)
- pH Range: 7.2-8.2
- Enzymatic activity may affect pH during storage.

TRACE™ LIQUID MOLYBDENUM

TRACE™ contains elemental molybdenum and ACT® that combine to support vital biochemical reactions. Once applied to the leaf, **TRACE™** rapidly moves throughout the xylem and phloem conductive tissue of the turf plant.

RESULTS

When present at proper levels, molybdenum enhances nitrogen efficiency and minimizes stress by catalyzing the enzymatic reduction of nitrites and nitrates that may accumulate in plant tissues. In the soil and root system of various plants, molybdenum acts as a co-enzyme for nitrogen fixation by beneficial microbes.

BENEFITS

- Supports nitrogen metabolism by catalyzing the conversion of nitrates (NO3) into amino acids within the plant
- Essential to the conversion of inorganic phosphorus into organic forms in the plant

GUARANTEED ANALYSIS

Molybdenum (Mo)..... 6.0%

Derived from Sodium Molybdate.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

AMINO ACIDS | Amino acid fertilizers are readily absorbed, transported, and used as a source of nitrogen and carbon for plants.

MOLYBDENUM | Required by enzymes involved with nitrogen conversion and reduction as well as symbiotic nitrogen fixation.

PHLOEM | The vascular tissue in plants that conducts sugars and other metabolic products downward from the leaves.

XYLEM | The vascular tissue in plants that conducts water and dissolved nutrients upward from the root and also helps to form the woody element in the stem.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

TRACE™ is highly concentrated. Dilute with water to ensure adequate coverage. Jar test for compatibility prior to final tank mixing with other products.

GREENS, TEES AND TURF:

Apply 2-4 ounces in 25-50 gallons of water per acre, or for smaller areas apply 0.1 ounce in 5-10 gallons of water per 1000 square feet. Apply every 30 days or as needed with sprayer or through fertigation. Water normally following application.

PHYSICAL CHARACTERISTICS

- Weight: 9.1 lbs./gal.
- pH Range: 7.2-8.2
- Enzymatic activity may affect pH during storage.

Adding 2-4 ounces of TRACE per acre is like an insurance policy for our nitrogen applications on over 300 acres of turf

Mick Williamson, MMM Landscape
Morrison Ranch Properties
Gilbert, AZ

AQUA PRO™ ORGANIC WATER CONDITIONER

AQUA PRO™ contains enzymes that have the unique ability to split the water (H2O) molecule releasing essential oxygen, right from the water! This action complements mechanical aeration systems to maximize oxygen levels and stimulate aerobic bacteria to digest unwanted sludge, reduce ammonia and odors.

Lakes and Ponds are costly to maintain and often contain high levels of suspended solids and unwanted nutrients which leads to algae.

RESULTS

Applying on a regular basis supplies oxygen and provides nutrients that support beneficial aerobic bacteria, which in turn breakdown sludge in lakes and ponds.

BENEFITS

- Eliminates or reduces offensive odors
- Encourages proliferation of aerobic bacteria
- Accelerates digestion of organic matter and sludge
- Raises dissolved oxygen (DO) levels
- Reduces suspended solids
- Enzymatically buffers pH
- Toxicology tested to be SAFE and NON-TOXIC

INGREDIENTS

Contains: Enzymes, bio-complexed nutrients and natural buffers.

TERMINOLOGY

ACT® | L-Form Amino Acids, Carbon, Hydrogen, Oxygen and Nitrogen that are key building blocks in all plant life. Contains freshwater algae.

AEROBIC BACTERIA | Bacteria that can grow and live only when oxygen is present.

DISSOLVED OXYGEN | Use of an enzyme system called H2O-Dehydrogenase (HDH) to effectively split the water molecule, releasing elemental oxygen and nitrogen within the soil.

APPLICATION

SHAKE WELL OR STIR BEFORE USE.

AQUA PRO™ may be diluted to ensure even distribution. Ideal method of application is to dilute product in a sprayer filled with water and evenly spray the solution over the top of the water.

LAKES AND PONDS:

Apply 2.5-5 parts per million (PPM) once every 2-4 weeks until desired conditions are attained, then maintain at 2.5 PPM every 2-4 weeks.

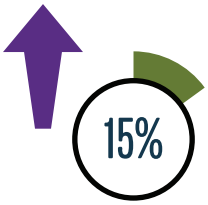
PHYSICAL CHARACTERISTICS

- Weight: 8.6 lbs./gal.
- pH Range: 7.6-9.0
- Enzymatic activity may affect pH during storage.

VIRGINIA TECH TURF TRIALS

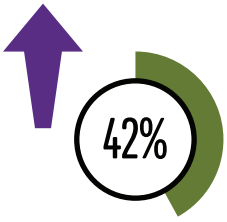
Determine the Efficacy of Biofeed® On Bentgrass

Mature Penncross Creeping Bentgrass (Agrostis Palustris) growing at the Virginia Tech Turfgrass Research Center was used for this study. Periodic observations were made to determine the effects of **SUPER-C™** on salt toxicity, root growth, clipping yields, turf color, photosynthetic capacity, drought stress, and S.O.D antioxidant activity. All areas were fertilized with additional urea nitrogen at a rate of 0.5-Lb of actual nitrogen to imitate actual use conditions. The following results show the dramatic benefits of **SUPER-C™.**



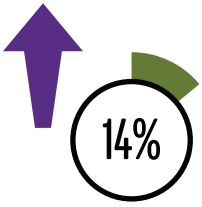
SALT BUFFERING AND ROOT GROWTH

2-10 cm plugs were removed from each treated plot and these were transplanted in plastic containers and were irrigated 3 times per week for 6 weeks with a 2% saline (salt) solution. The grass irrigated with 2% saline water and treated with Biofeed® produced 15% more roots than the control.



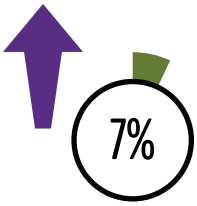
ROOT GROWTH UNDER DROUGHT CONDITIONS

Root mass dry weight increased by up to 42% when the Bentgrass areas were treated every 2 weeks at a rate of 4-8 ounces per 1000 sq. ft. of Biofeed®. Control areas exhibited less than 5%-8% increase in root growth during the same test periods.



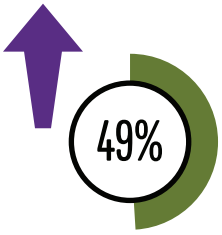
PHOTOSYNTHETIC CAPACITY

Turf treated with Biofeed® showed an average increase of 14% greater photosynthetic capacity than the control plots. This measurement accurately determines the rate of conversion of light into usable energy.



CHLOROPHYLL CAPACITY

During photosynthesis, tiny plant cells combine sunlight, water, and minerals, and convert it into chlorophyll. Throughout the tests, the Biofeed® treated Bentgrass had 7.0% higher chlorophyll content compared to the side-by-side control areas. Even minute increases in chlorophyll content result in improved stress tolerance.



SUPEROXIDE DISMUTASE (S.O.D.)

S.O.D. has been shown to control free radicals within green leafy plants, reducing environmental stress. Its production is relevant to chlorophyll production. However the Biofeed® treated Bentgrass in this study measured over 49% higher S.O.D. content as compared to the control plots.

UNIVERSITY OF CALIFORNIA RIVERSIDE

Evaluation of Biofeed® Applied on Tall Fescue

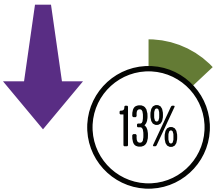
The University of California Riverside began a comparison study to evaluate the performance of Biofeed® soil conditioning fertilizers when applied to tall fescue for one year, in terms of visual quality ratings, clipping yields, clipping elemental analysis and root mass density.

The chemical fertilizers used in this study were TriKote, Turf Supreme, Par EX IBDU, and Nitra King. These are products commonly used on turf grass and are comparable to Scotts Fertilizer.

This study was conducted to determine if alternate fertilizer products that are designed to supply nutrients, biostimulants and humic substances can perform as well as nationally advertised synthetic brands. The nutrients contained in Biofeed are highly complexed with long-chain carbon molecules to reduce nutrient loss due to leaching and tie-up within the soil matrix. Upon entering the soil, Biofeed fertilizers undergo biological transformation, which converts the applied nutrients into nutrient rich microbial residues that become the preferred food source for healthy plant growth.

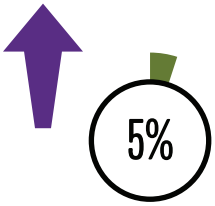
VISUAL RATINGS – NITROGEN USAGE

Visual ratings were comparable and Biofeed treated turf grass performed similar to the chemically fertilized turf. While all fertilized turf areas performed substantially better than the check, Biofeed treated areas received 50% LESS of the applied rate of nitrogen each month compared to the yearly rates of nitrogen for all other tested turf areas.



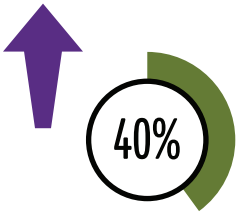
CLIPPING YIELDS ANALYSIS

The Biofeed fertilized turf produced 13% LESS clippings on an annual basis than the chemically fertilized turf during the 12-month study.



ROOT MASS DENSITY

Samples were taken twice during the one-year study period. Overall, Biofeed fertilized turf averaged 5% greater Root Mass Density than the conventional fertilized turf areas.



NUTRIENT DENSITY

Tissue samples revealed that the Biofeed fertilized turf contained 40% higher levels of primary secondary and trace nutrients compared to the control and the chemically fertilized turf areas. Researchers stated that this data suggests that the Biofeed treatments allowed the plant tissue to absorb significantly greater amounts of N, P, S, Ca, Mg, Zn, Mn, Fe, and Mo.

WATER CONSERVATION

The Biofeed® ACT® base additive contains natural chelates which buffer and combine with harmful salt to make is soluble. The salt toxicity reduces as it becomes easier for salt to leach away from the root-zone. The removal of excess salt loosens the soil structure to allow better movement of water. Better soil structure reduces water usage in several ways while also creating healthier, more beautiful turf. Using Biofeed fertilizers helps your water penetrate to the roots in your soil, helping you conserve water, and cut watering costs.

- Eliminate water pooling and runoff. Either of these is a sign your soil is not absorbing water as it should. Irrigation water that does not penetrate the soil surface is wasted.
- Increase water holding capacity. The deeper water penetrates the less likely it will evaporate away. More efficient soil water holding capacity reduces how much and how often you irrigate.
- Root Length and Root Density. Water is taken into plants through the leaves and roots. A loosened soil crumb structure allows for deeper root growth in addition to increased root density. This means the roots have more surface area through which to absorb water. Less water is needed as it becomes easier for the plant to acquire the water it needs.

POWERFUL AND ECO-FRIENDLY

And if the dramatic results and increased turf quality are not enough, Biofeed® products are eco-friendly and free of the following harmful ingredients:

- No harmful residues that accumulate and suppress soil fertility
- No EDTA (Ethylenediaminetetraacetic)
- No mined humic compounds (Leonardite)
- No chemically derived additives
- No petroleum hydrocarbons
- No toxic elements
- No fulvic acid
- No sulfuric acid

SUPPORTS CARBON SEQUESTRATION

Biofeed® Solutions, Inc. is proud to be doing our part for the climate by created eco-friendly products that nourish and stimulate the various soil microbial systems to multiply and function optimally, creating a live soil environment that not only is proven to produce thriving turf but also creating better conditions for soil to absorb carbon dioxide out of the atmosphere to be properly stored and used below ground where nature intended.


PROTECTING THE
EARTH'S DELICATE
ECOSYSTEMS
Biofeed®

BIOFEED SOLUTIONS, INC.

PO BOX 3434
GLENDALE, AZ 85311
USA

P: 602-BIO-FEED (602-246-3333)
F: 623-930-8598

www.biofeed.com

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